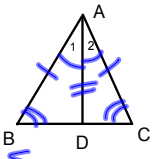


Warmup!

Given: $\overline{AD}$ bisects $\angle BAC$

$\overline{AB} \cong \overline{AC}$

Prove: $\angle B \cong \angle C$

S.	R.
1	1 Given
2 $\angle 1 \cong \angle 2$	2 def of $\angle$ Bis.
3 $\overline{AD} \cong \overline{AD}$	3 Refl.
4 $\triangle BAD \cong \triangle CAD$	4 SAS
5 $\angle B \cong \angle C$	5 CPCTC

4.7 Use Isosceles and Equilateral Triangles

ΔABC is isosceles

$\overline{AB} \cong \overline{AC}$

$\angle A$ is the vertex angle

$\angle B$ and $\angle C$ are the base angles

B.A.T.

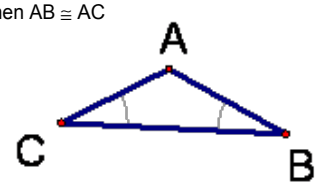
Base Angles Theorem-(Theorem 4.7) If 2 sides of a Δ are $\cong$, then the angles opposite those sides are $\cong$.

Since $\overline{AB} \cong \overline{AC}$, then $\angle C \cong \angle B$

Conv. BAT

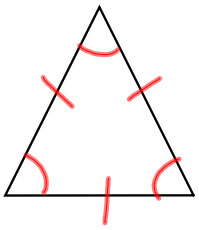
The Converse of the Base Angles Theorem-(Theorem 4.8) If 2 angles of a Δ are $\cong$, then the sides opposite those angles are $\cong$.

Since $\angle C \cong \angle B$, then $\overline{AB} \cong \overline{AC}$



Corollary -If a Δ is equilateral, then it is equiangular

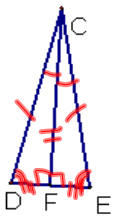
Corollary -If a Δ is equiangular, then it is equilateral

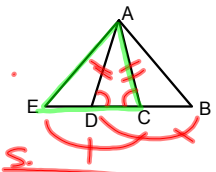


*****The altitude of an isosceles △ is ⊥ to the base at its midpoint.

If $\overline{CF}$ is the altitude from the vertex angle, then DF = FE and m∠CFE = 90°

Why? ΔDFC ≅ ΔEFC by HL

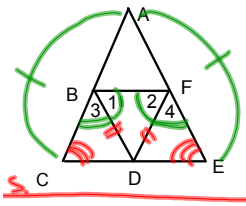




Given: $\overline{EC} \cong \overline{DB}; \angle ACD \cong \angle ADC$

Prove: $\triangle ECA \cong \triangle BDA$

S.	R.
①	① Given
② $\overline{AD} \cong \overline{AC}$	② Conv. B.A.T
③ $\triangle ECA \cong \triangle BDA$	③ SAS



Given: $\overline{AC} \cong \overline{AE}; \angle 1 \cong \angle 2; \angle 3 \cong \angle 4$

Prove: $\triangle BCD \cong \triangle FED$

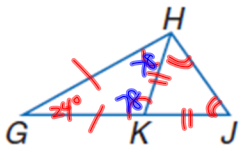
S.	R.
①	① Given
② $\angle C \cong \angle E$	② B.A.T.
③ $\overline{BD} \cong \overline{FD}$	③ Conv. B.A.T.
④ $\triangle BCD \cong \triangle FED$	④ AAS

Not to scale!

In the figure, $\overline{GK} \cong \overline{GH}$ and $\overline{HK} \cong \overline{KJ}$.

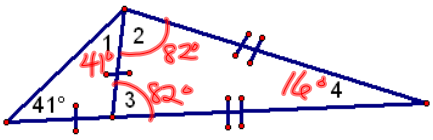
$m\angle G = 24$

$m\angle J =$ 39°

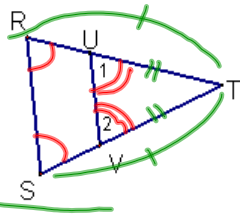


78 ÷ 2

Find the measures of the numbered angles.



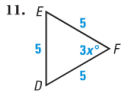
Given: $\angle R \cong \angle S$
$\angle 2 \cong \angle 1$
Prove: $\overline{RU} \cong \overline{SV}$

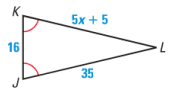


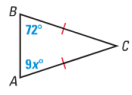
S.	R.
1)	1) Given
2) $\overline{RT} \cong \overline{ST}$, $\overline{UT} \cong \overline{VT}$	2) Conv. BAT
3) $RT = ST$, $UT = VT$	3) def of $\cong$
4) $RT = RU + UT$, $ST = SV + VT$	4) SAP
5) $RU + UT = SV + VT$	5) Subst.
6) $RU = SV$	6) Subtr.
7) $\overline{RU} \cong \overline{SV}$	7) def of $\cong$

HW
p267-268 #s 11-13, 15-17, 20-22, 32, 33, plus 2 proofs sent out in classroom

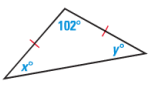
ALGEBRA Find the value of x.

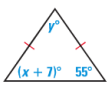
11. 

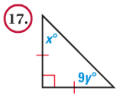
12. 

13. 

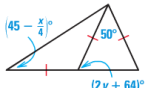
ALGEBRA Find the values of x and y.

15. 

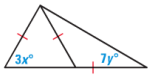
16. 

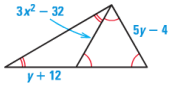
17. 

ALGEBRA Find the values of x and y, if possible. *Explain* your reasoning.

20. 

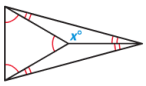
2y +64

21. 

22. 

ALGEBRA Find the value(s) of the variable(s). *Explain* your reasoning.

32.



33.